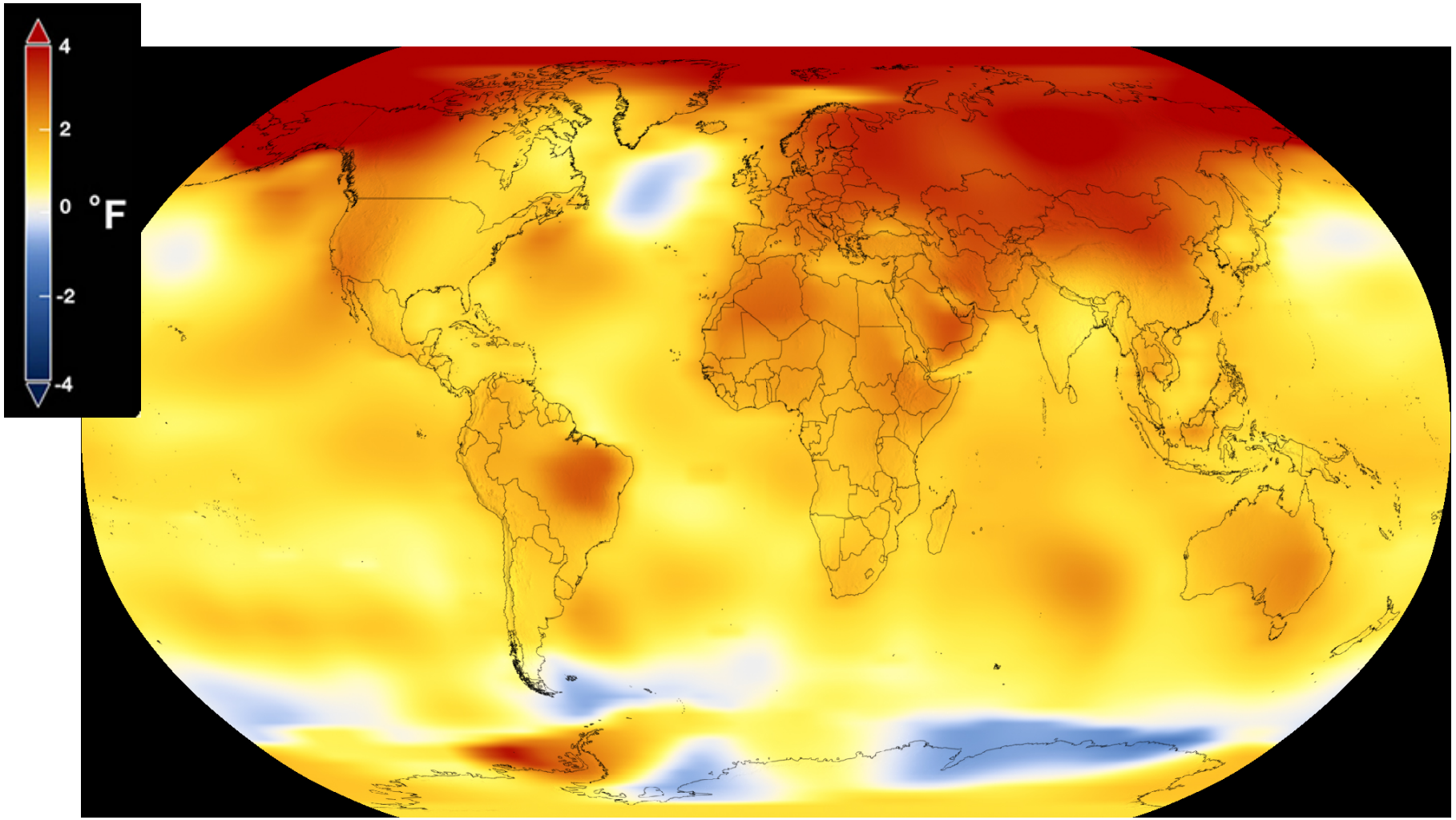
California Energy Ratepayers Conference

Hosted by California Manufacturers & Technology Association – Citizen Hotel, *Quorum Room*

Robert Weisenmiller, Chair, California Energy Commission

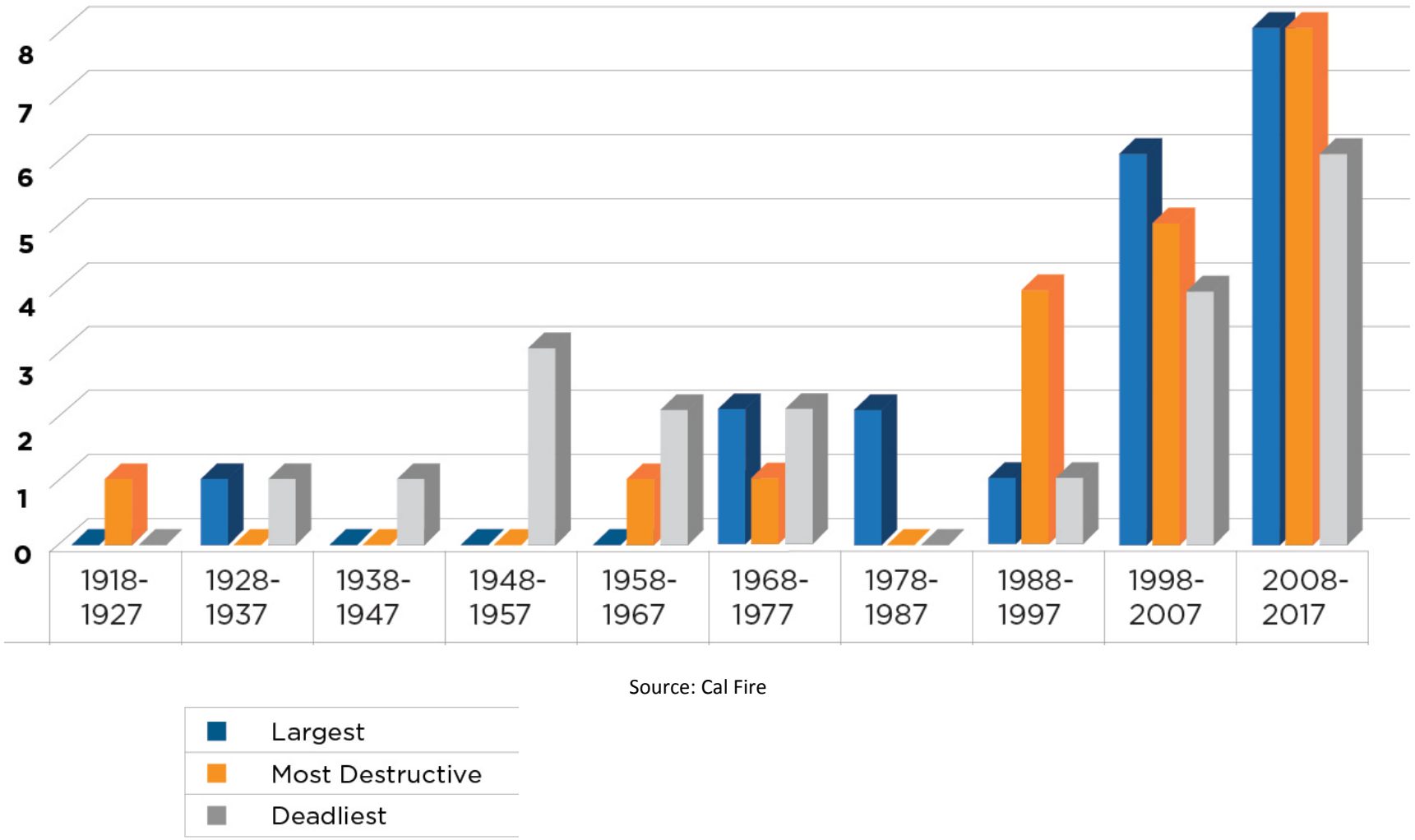
June 21, 2018

Global Temperature: 1951-1980 v 2013-2017



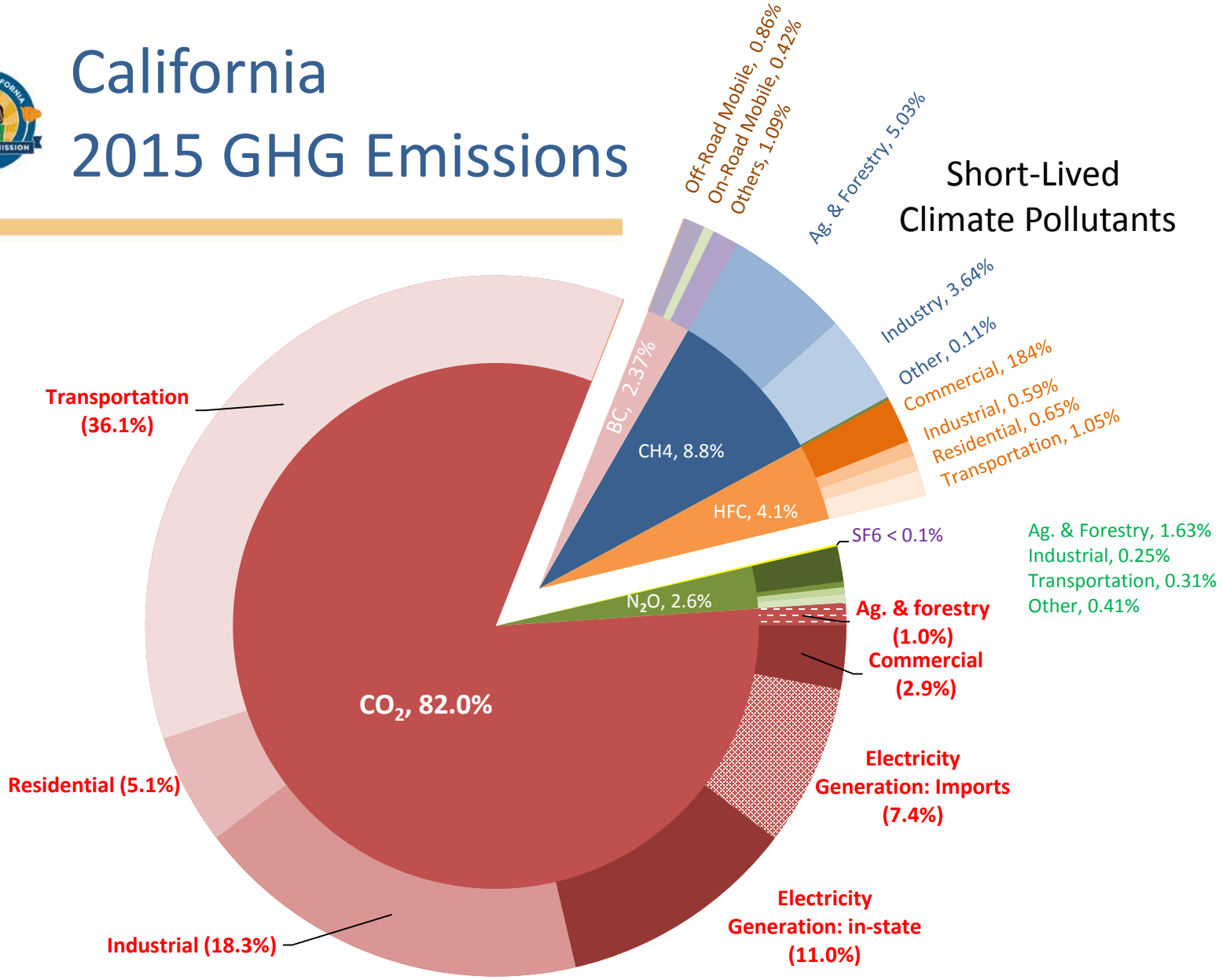
Source: NASA/GSFC/Scientific Visualization Studio

Climate Adaptation: Preparing for Future Fires in California



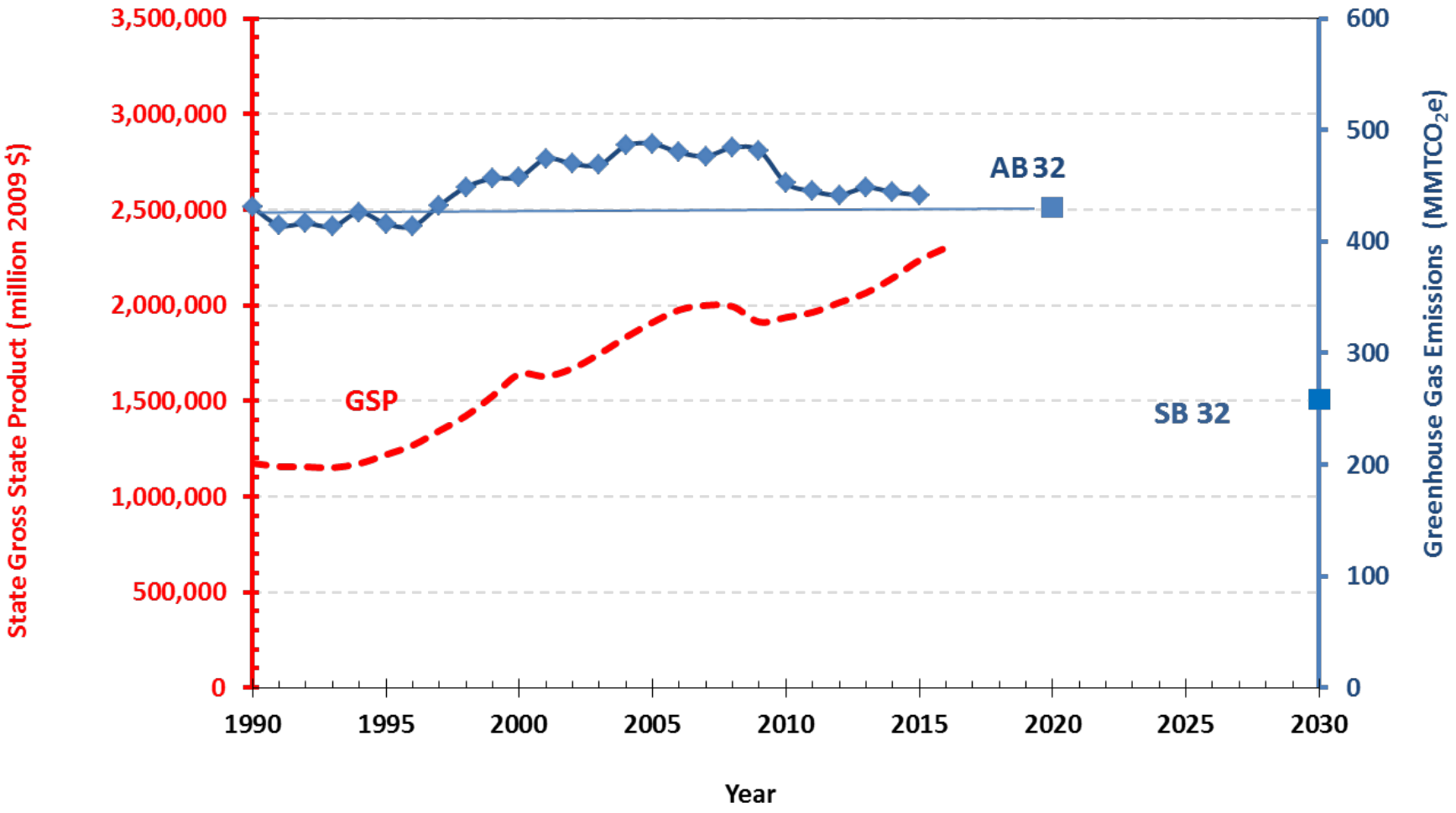
Source: Cal Fire

California
2015 GHG Emissions

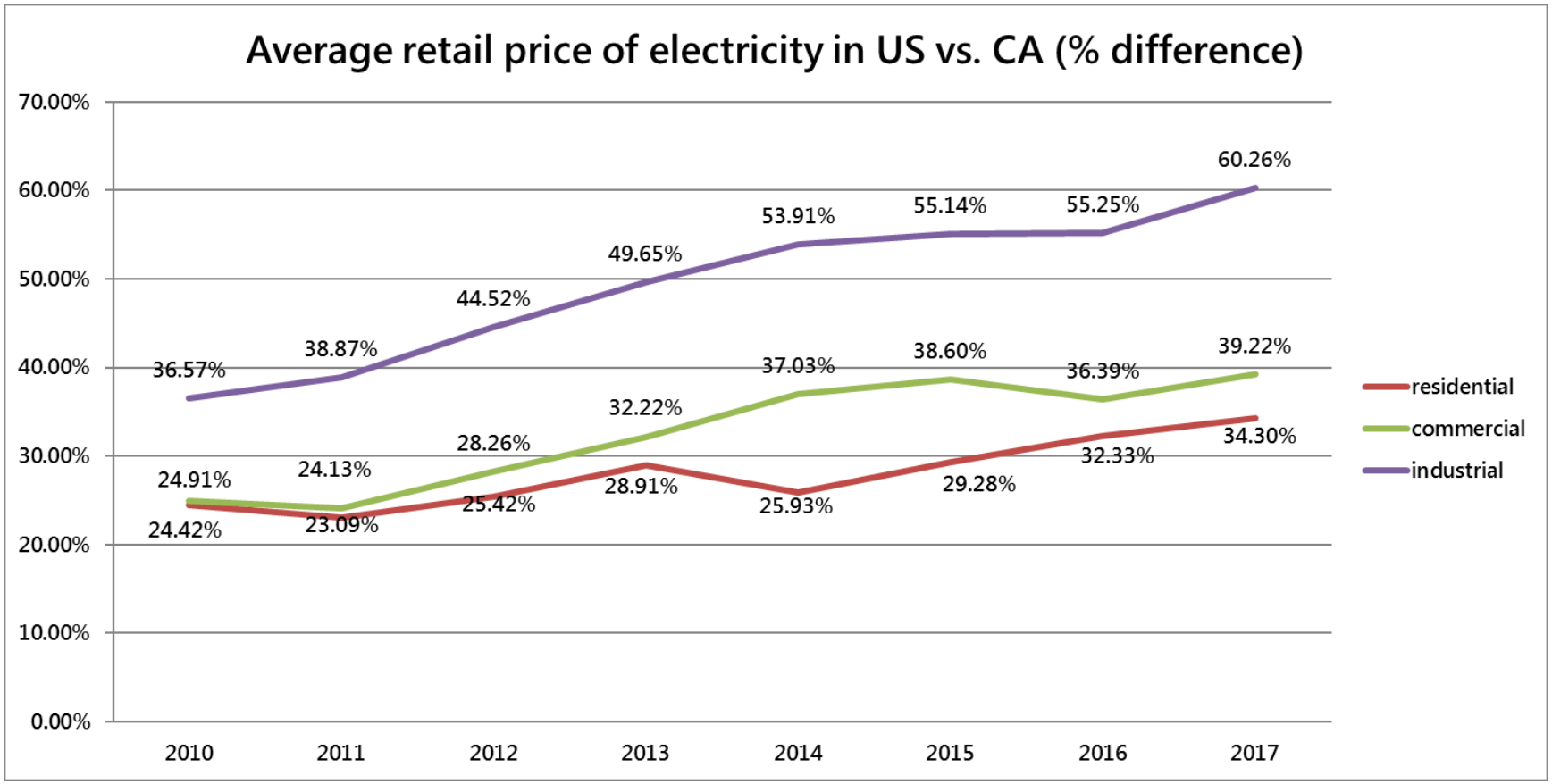


Source: California Energy Commission staff using data from CARB's 2017 Greenhouse Gas Emissions Inventory of 2015 emissions. Black carbon emissions data are from 2013, the most recent data available. The transportation sector is 36.2 percent of total when including black carbon and 38.5 percent when black carbon is not included.

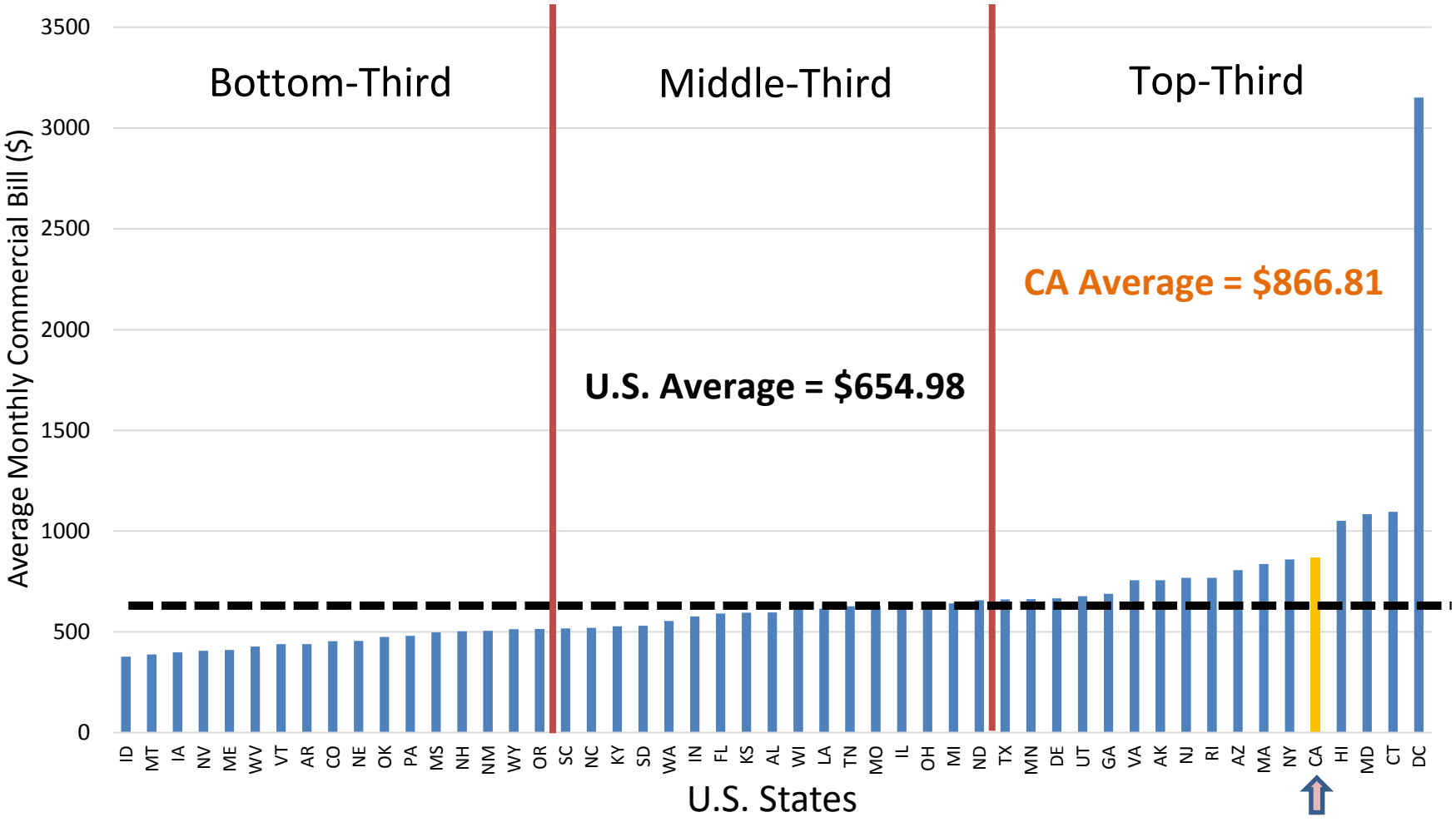
GSP Grows as GHG Emissions Decline



CA Industrial Rates Higher Compared to Commercial and Residential

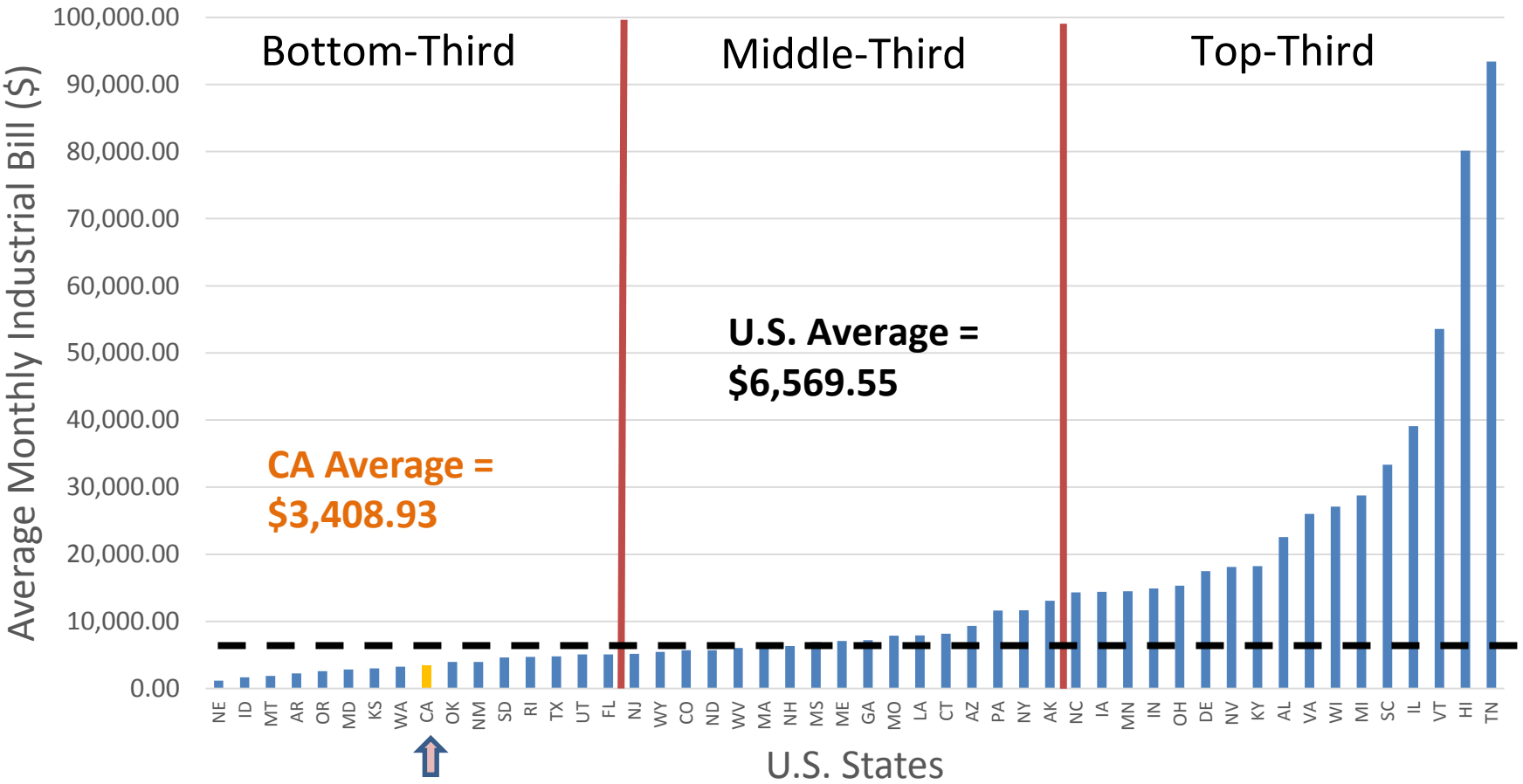


Average Monthly Commercial Bill by State



2016 Data received from the U.S. Energy Information Administration (EIA)
https://www.eia.gov/electricity/sales_revenue_price/pdf/table5_b.pdf

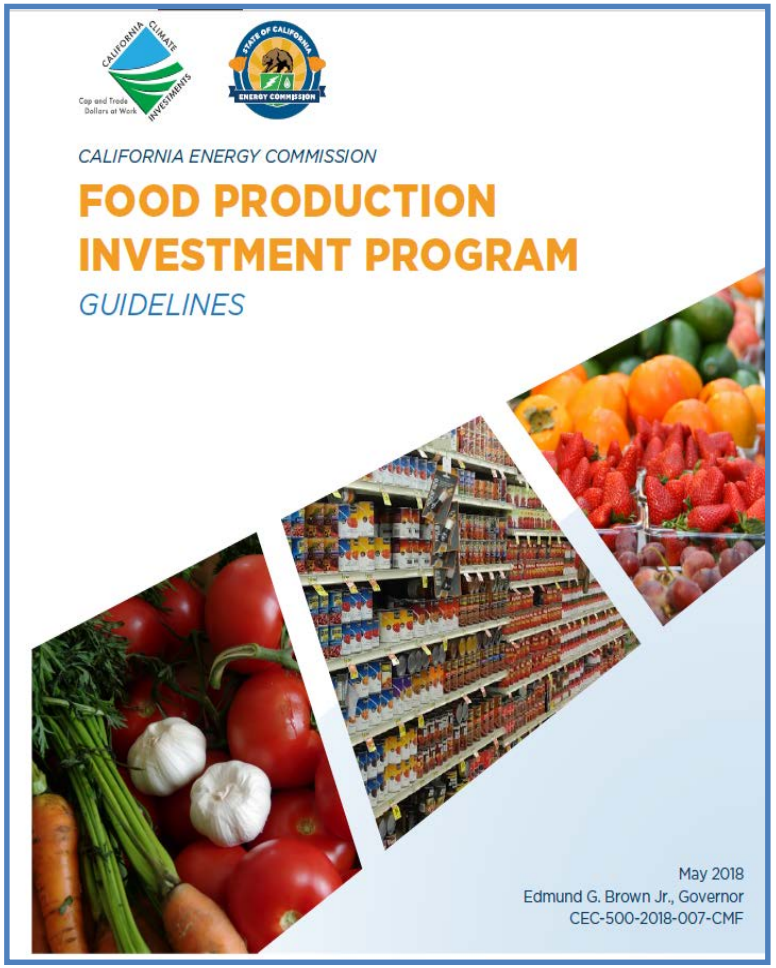
Average Monthly Industrial Bill by State



**District of Columbia excluded on graph as outlier ($1.4 million/month serving only one customer)*

2016 Data received from the U.S. Energy Information Administration (EIA)
https://www.eia.gov/electricity/sales_revenue_price/pdf/table5_c.pdf

Food Processor Investment Program



- Established under Budget Act of 2017, AB109
  - "… shall be used to provide grants, loans, or any financial incentives to food processors to implement projects that reduce GHG emissions."
- $60M from GGRF for project
- Adopt commercially available and advanced energy technologies
- Provide technical confidence for further technology adoption
- Benefit priority populations (DACs, low income communities)

Food Processor Investment Program

- Tier I – Focus is commercially available, drop-in replacements or additions
  - Award Sizes estimated $100k - $3M
- Tier II – Focus on adoption and demonstration of cutting-edge emerging technologies
  - Award Sizes estimated $2M to $8M
- Tentative Scheduled for June 2018 Release Grant Solicitation with July 2018 Pre-application Workshop

Appendix

For more details of our Research and Development Program, please visit our Website at http://www.energy.ca.gov/research/

You can find information out about:

Explore Projects

Funding Opportunities

Upcoming Events

You can also find a short video that gives interested parties an introduction to our funding opportunities

Unlocking Industrial Energy Efficiency Through Optimized Energy Management Systems

Dashboard comparing energy used to production.

Recipient: UC Berkeley

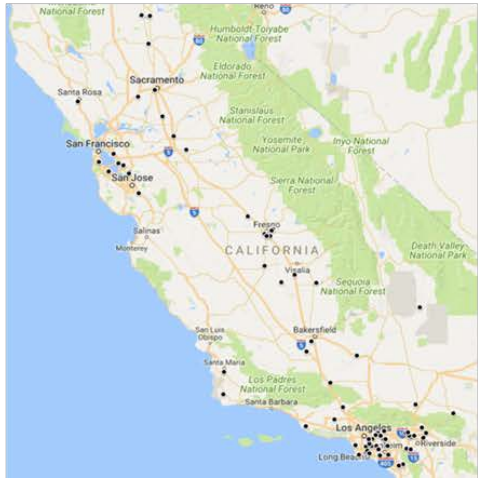
Award: $4,981,729

Co-funded Amount: $1,530,590

Project Location: Various locations, one-third of them at food processing plants.

Project Term: 6/2015 to 3/2019

Demonstration locations.



UC Berkeley, Massachusetts Institute of Technology, and Lightapp will demonstrate Lightapp's pre-commercial, software-based, optimized energy management system on compressed air systems in 100 California industrial plants served by the state's investor-owned utilities.

Demonstration and Commercial Implementation of Energy Efficient Drying for Walnuts

Recipient: UC Davis

Award: $1,118,285

Co-funded Amount: $280,000

Project Location: Emerald Farms (Maxwell)

Project Term: 6/2014 to 3/2018

This project demonstrates a novel infrared technology for walnut drying at pilot and commercial scales to achieve 35% natural gas and electricity savings by significantly reducing drying time. This new technology uses infrared as an efficient heat source to quickly remove moisture from the walnut surface and shell followed by the final drying using hot air.

Efficient Industrial Operations While Reducing Air Emissions

Recipient: Gas Technology Institute, Inc.

Agreement Number: PIR-14-004

Award: $798,788

Match: $525,000

Manufacturing Partner: Power Flame

Project Location: Santa Barbara, CA

Project Term: 10/8/14 to 3/31/18

This project demonstrated the technical and economic feasibility of an efficient, emerging low-NOx burner technology, termed dynamic staged entrainment (DSE). The DSE burner was installed with a commercial firetube boiler at a commercial laundry facility. The demonstration documented reduced natural and gas and electricity consumption (approx. 9% savings in fuel usage compared to baseline boiler), reduced NOx and carbon dioxide emissions, reduced equipment cost compared to other systems to meet local air district requirements for NOx.

Measurement and Control of Ventilation Rates in Commercial Buildings in California

Recipient: Lawrence Berkeley National Laboratory

Agreement Number: PIR-14-003

Award: $750,000

Match: $0

Project Location: Berkeley, CA

Project Term: 11/1/14 to 9/30/17

This project will analyze, via modeling, the energy, peak electricity demand, and indoor air quality advantages of controlled minimum ventilations. The project will benefit Californians in natural gas IOU service territories be enabling better measurement and control of VRs in the buildings. With better control systems for VRs, excessive VR that waste energy and increase energy costs can be avoided.